FARS & GES 2005

CHANGES TO DATA COLLECTION

Dennis Flemons

State Data Reporting System Division, NCSA

- FARS – Fatality Analysis Reporting System:

  Census of All Fatal Motor Vehicle Traffic Accidents in the U.S.

- NASS – National Automotive Sampling System:

  Nationally Representative Sample of Motor Vehicle Traffic Accidents

  - CDS - Crashworthiness Data System
  - GES - General Estimates System

Fatality Analysis Reporting System

- **Purpose –**
  - **Provide an objective basis to evaluate the effectiveness of motor vehicle safety standards and highway safety programs**

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Fatality Analysis Reporting System

- **All Fatal Motor Vehicle Traffic Accidents**
  - **Fatality w/in 30 Days of Crash**
    - **~ 37,000/year**
  - **Covers All 50 States, DC,and Puerto Rico**
- **Began Operation in 1975**
- **Operated Cooperatively with States**

FARS Data Sources

- Police Accident Reports
- State Vehicle Registration Files
- State Driver Licensing Files
- State Highway Department Data
- Vital Statistics
- Death Certificates
- Coroner/Medical Examiner Reports
- Hospital Medical Records
- Emergency Medical Services Reports

NASS General Estimates System

- **Purpose-**
  - **provide statistical information as an aid to monitor large scale trends on the general characteristics of the nation's police-reported motor vehicle traffic accident experience**

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NASS General Estimates System

- The NASS General Estimates System (GES) collects a nationally representative sample of ALL police reported motor vehicle traffic accidents.
- Annual sample of approximately 57,000 police traffic accident reports
  - Must meet the state reporting criteria
  - Must be police reported (signed by a police officer)
  - All types of motor vehicles

GES Data Source

- Data Source is Only the Police Accident Reports

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ORIGINAL DATABASE DESIGN

- ONE ACCIDENT RECORD
- VEHICLE RECORDS
- DRIVER RECORDS
- PERSON RECORDS

VEHICLE RECORDS

- ONLY MOTOR VEHICLES IN TRANSPORT
  - IN MOTION ON A TRAFFICWAY
  - STATIONARY ON A ROADWAY

Trafficway Review

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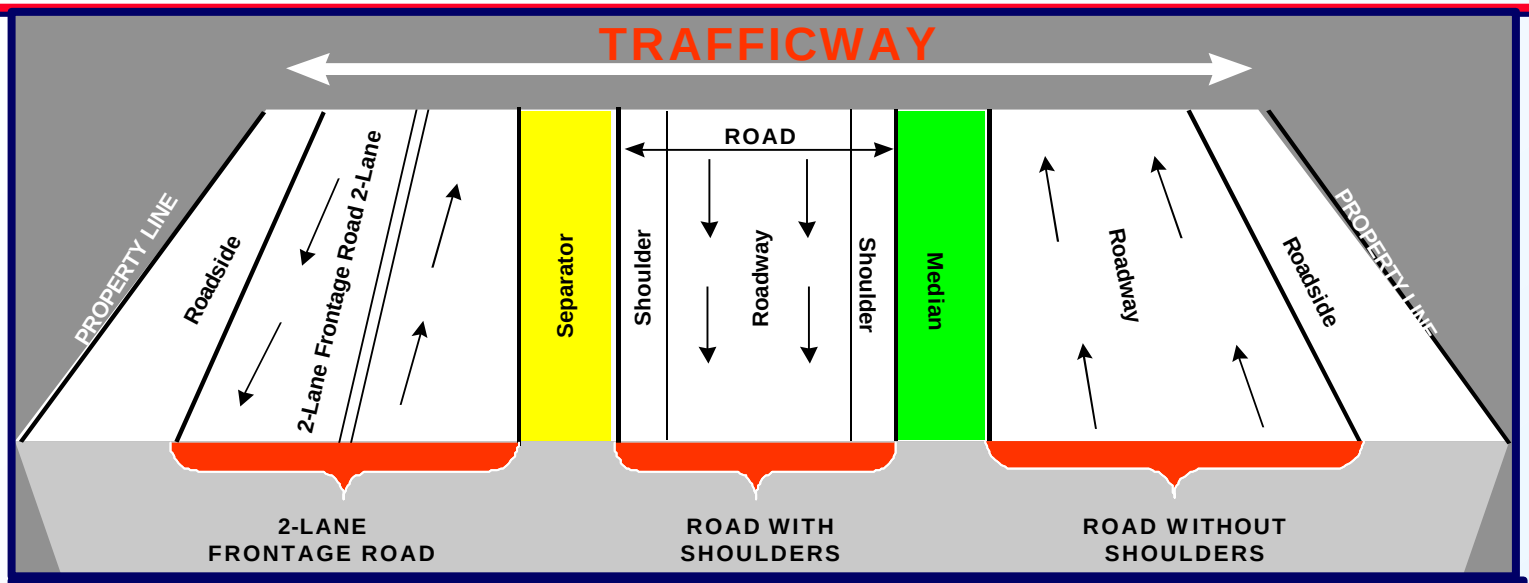

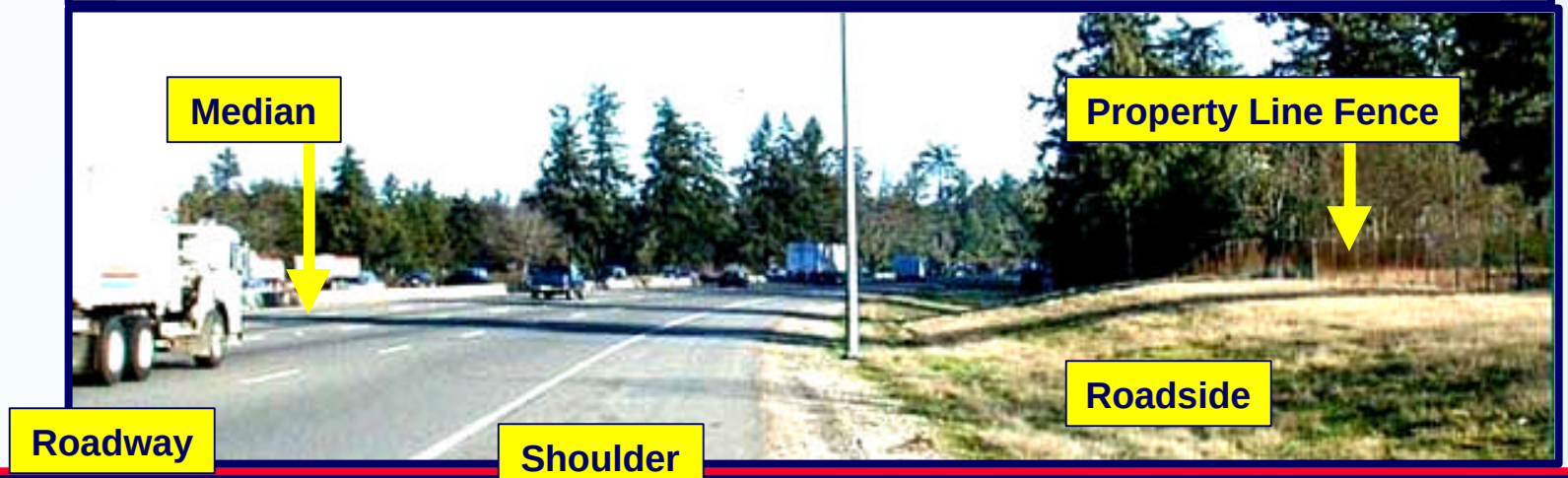

CONSEQUENCES

- **CRASH INVOLVED**
  - **HEAVY TRUCK PARKED ROADSIDE**
  - **FIRE VEHICLE STOPPED OFF ROADWAY**
    - **NOT IN TRANSPORT**
    - **NO VEHICLE RECORD**
    - **NO VEHICLE DATA**

NOT IN TRANSPORT

- NO VEHICLE DATA
  - MAKE
  - MODEL
  - BODY TYPE
  - MODEL YEAR
  - VIN

NOT IN TRANSPORT

- NO VEHICLE DATA
  - IMPACT POINTS
  - MOST HARMFUL EVENT
  - NUMBER OF OCCUPANTS
  - STRUCK / STRUCK & STRIKING
  - FIRE/EXPLOSION
  - SPECIAL USE
  - EXTENT OF DEFORMATION

CONSEQUENCES NOT IN-TRANSPORT VEHICLES

- **TREATMENT OF OCCUPANTS**
  - **MORE LIKE OTHER NON-MOTORISTS**
  - **LESS LIKE OTHER VEHICLE OCCUPANTS**

NOT IN TRANSPORT VEHICLES

- TREATMENT OF OCCUPANTS
  - INJURY SEVERITY RECORDED
  - AGE RECORDED
  - SEAT POSITION NOT RECORDED
  - RESTRAINT USE NOT RECORDED
  - AIRBAGS NOT RECORDED
  - EJECTION NOT RECORDED

HARMFUL EVENTS

- **FIRST HARMFUL EVENT**
  - **First Damage or Injury Producing Event in Accident**
- **MOST HARMFUL EVENT**
  - **Most Injury or Damage Producing Event for Each Vehicle**
- **SEQUENCE OF EVENTS - 2004**
  - **Up to Six Events for Each Vehicle.**

SEQUENCE OF EVENTS- 2004

V32

SEQUENCE OF EVENTS

Format: 2 numeric, occurring 6 times

Must be coded for an original submission.

Element Values:

Blanks

Non-Collision

01 Overturn/***Rollover***
02 Fire/Explosion* (Always code if present)
03 Immersion
04 Gas Inhalation*
05 Fell/Jumped from Vehicle
06 Injured in Vehicle*
16 Thrown or Falling Object
44 Pavement Surface Irregularity (Pothole, Grooved, Grates)
47 Vehicle Occupant Struck or Run Over by Own Vehicle
51 Jackknife
60 Cargo/Equipment Loss or Shift
61 Equipment Failure (blown tire, brake failure, etc.)
62 Separation of Units
63 Ran Off Road - Right
64 Ran Off Road - Left
65 Cross Median/Centerline
66 Downhill Runaway
67 Vehicle Went Airborne
07 Other Non-Collision

Collision with Motor Vehicle

12 Motor Vehicle in Transport ***on Same Roadway***
13 Motor Vehicle in Transport ***on*** Other Roadway
14 Parked Motor Vehicle ***(not in Transport)***
45 Working Construction, Maintenance or Utility Vehicles
54 Motor Vehicle Struck by Falling/Shifting Cargo or Anything Set in Motion by Another Motor Vehicle in Transport

***These values are unlikely occurrences and will raise an error flag.**

SEQUENCE OF EVENTS- 2004

Non-Collision

01	Overturn/***Rollover***
02	Fire/Explosion* (Always code if present)
03	Immersion
04	Gas Inhalation*
05	Fell/Jumped from Vehicle
06	Injured in Vehicle*
16	Thrown or Falling Object
44	Pavement Surface Irregularity (Pothole, Grooved, Grates)
47	Vehicle Occupant Struck or Run Over by Own Vehicle
51	***Jackknife***

SEQUENCE OF EVENTS- 2004

Collision with Motor Vehicle

12 Motor Vehicle in Transport ***on Same Roadway***
13 Motor Vehicle in Transport ***on*** Other Roadway
14 Parked Motor Vehicle ***(not in Transport)***
45 Working Construction, Maintenance or Utility Vehicles
54 Motor Vehicle Struck by Falling/Shifting Cargo or Anything Set in Motion by Another Motor Vehicle in Transport

GOAL SET IN 2003

- **REVISED CODING SCHEME**
  - **INCLUDE MORE INFORMATION ON**
    - **NOT-IN-TRANSPORT MOTOR VEHICLES**
    - **THEIR OCCUPANTS**
  - **RETAIN COMPATABILITY WITH PAST DATA**

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CONSIDERATIONS

- **A BASE LEVEL CHANGE AFFECTING:**
  - **CASE STRUCTURING**
  - **DATA ENTRY SYSTEM / EDIT CHECKS**
  - **COUNTER ELEMENTS**
  - **ELEMENT NAMES / VALUE NAMES**
  - **CODING PROCEDURES / TRAINING**
  - **WORK LOAD**
  - **ANALYTICAL FILE BUILDING**

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CONSIDERATIONS

- **ACCIDENT CLASSIFICATION BY NUMBER OF VEHICLES**
  - **Based on MOTOR VEHICLES in TRANSPORT**
    - **(FARS and ANSI D16.1)**
  - **WILL NOT CHANGE**
    - **SINGLE-VEHICLE, 2-VEHICLE, MULTI-VEHICLE**
    - **HAVE SAME DEFINITIONS AS OLD**

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ACCIDENT CLASSIFICATION BY NUMBER OF VEHICLES

- M. V. in T. COLLIDES WITH VEHICLE PARKED ROADSIDE
  - THIS IS STILL A SINGLE VEHICLE CRASH

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ACCIDENT CLASSIFICATION BY NUMBER OF VEHICLES

- TWO M. V. in T. COLLIDE IN ROADWAY LANE
- ONE RUNS OFF ROAD AND STRIKES VEH. STOPPED ON SHOULDER
  - THIS IS STILL A TWO-VEHICLE CRASH

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ACCIDENT CLASSIFICATION BY NUMBER OF VEHICLES

- **DIFFERENCE - NEW SCHEME**
  - **INCLUDE SELECT VEHICLE INFORMATION ON PARKED VEHICLES**
  - **DISTINGUISH FROM M.V. in T.**
  - **RECORD MORE DATA ON OCCUPANTS**

CONSIDERATIONS

- **MORE FUNDAMENTALLY-**
  - **NOT CHANGING DEFINITION OF "MOTOR VEHICLE TRAFFIC ACCIDENT"**
  - **CONTINUE TO REQURE ALL CONDITIONS FOR MOTOR VEHICLE TRAFFIC ACCIDENT**
  - **IN BRIEF:**
    - **CRASH MUST INVOLVE A MOTOR VEHICLE IN TRANSPORT ON A TRAFFICWAY**

Coded "Not In-Transport" Motor Vehicle Types

- PARKED
  - Parked in designated parking areas
- STOPPED OFF ROADWAY
  - Shoulder, Median, Roadside, Gore, Stopped Outside Trafficway
- IN MOTION OUTSIDE TRAFFICWAY
- WORKING MOTOR VEHICLES

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WORKING VEHICLES PRE-2005

- NOT MOTOR VEHICLES in TRANSPORT
  - NOT MOTOR VEHICLES
    - NOT TRANSPORT VEHICLES
  - EXAMPLES:
    - Dump Truck / Cement Mixer Spreading Load
    - Highway Maintenance Truck Painting Stripes
    - Tractor Mowing the Roadside / Median
    - Utility Company Bucket Truck at Work

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WORKING VEHICLES 2005

- NOT MOTOR VEHICLES in TRANSPORT
  - NOT IN TRANSPORT
    - ARE MOTOR VEHICLES
      - ARE TRANSPORT VEHICLES
  - ALLOWS A "TRUCK" TO REMAIN A TRUCK"
  - EXCLUDES SOME VEHICLES FROM BEING "IN TRANSPORT"

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NEW VEHICLE ELEMENT

- **UNIT TYPE**
  - 1 MOTOR VEHICLE IN-TRANSPORT
  - 2 MOTOR VEHICLE NOT IN-TRANSPORT, WITHIN TRAFFICWAY
  - 3 MOTOR VEHICLE NOT IN-TRANSPORT, OUTSIDE TRAFFICWAY
  - 4 WORKING MOTOR VEHICLE

- **GES COMBINES 2 & 3**

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INCLUDED in "UNIT TYPE" Codes 2 & 3

CODE (2) MOTOR VEHICLE NOT IN-TRANSPORT, WITHIN TRAFFICWAY

- Parked
- Stopped Off Roadway

CODE (3) MOTOR VEHICLE NOT IN-TRANSPORT, OUTSIDE TRAFFICWAY

- Parked
- Stopped
- In motion

- **GES COMBINES (2) & (3)**

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Parked Motor Vehicle Examples

Vehicles Parallel Parked in designated spaces.

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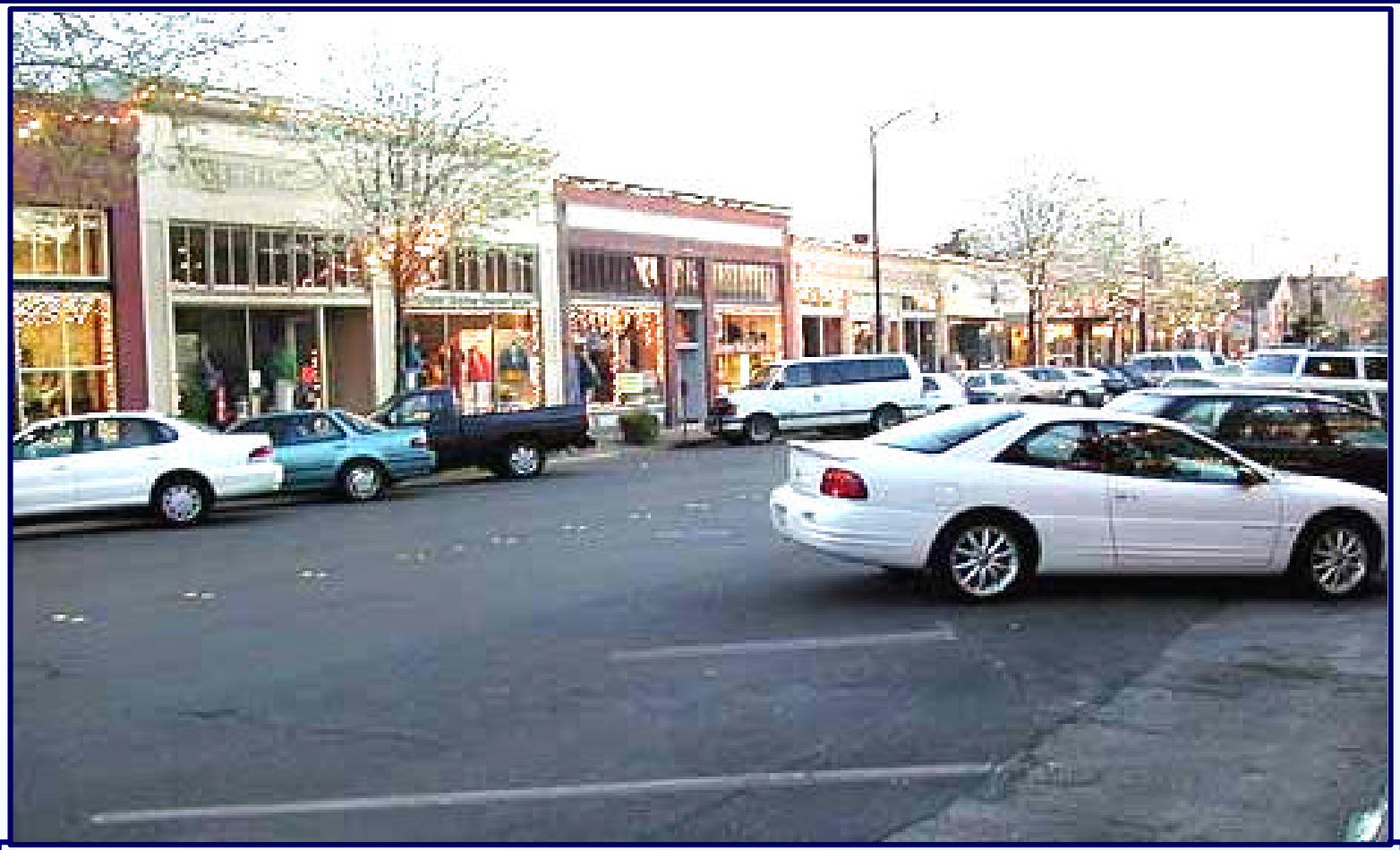
Parked Motor Vehicle Examples



Vehicles diagonally parked in designated spaces.

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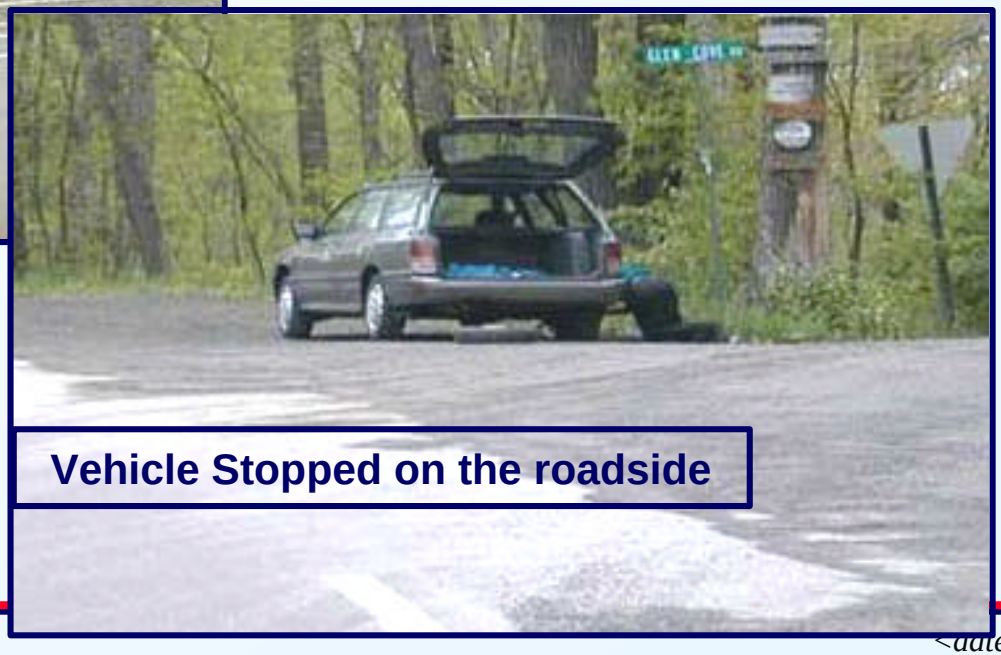
Stopped Off Roadway Vehicle Examples

Vehicle Stopped in the median



Vehicle Stopped on the roadside

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Stopped Off Roadway Vehicle Examples

Vehicle Stopped on the road shoulder (Off Roadway)

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Stopped Outside Trafficway

INCLUDED in "UNIT TYPE" Code 4

- **CODE (4) WORKING MOTOR VEHICLE**
  - Highway Construction, Maintenance or Utility Work Vehicles
  - Performing Work
  - Within or Outside Trafficway

EXCLUDED from "UNIT TYPE" Code 4

- **CODE (4) WORKING MOTOR VEHICLE**

  EXCLUDES:

  - Private Construction
  - Activities By Private Citizens (Snow Plow, Etc.)
  - City Garbage Collection
  - Mail/Delivery Trucks
  - Police / Emergency Vehicles At A Stop
  - Taxis

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Working Vehicle Examples

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Working Vehicle Examples

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Working Vehicle Examples

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Working Vehicle Examples

Examples Not Working Vehicle

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Examples
Not Working Vehicle

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Examples Not Working Vehicle

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Examples
Not Working Vehicle

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NOT IN-TRANSPORT MOTOR VEHICLES

- VEHICLE ELEMENTS NOT CODED
  - TRAVEL SPEED
  - VEHICLE MANEUVER
  - CRASH AVOIDANCE MANEUVER
  - ROLLOVER
  - JACKKNIFE
  - MANNER OF LEAVING SCENE
  - SEQUENCE OF EVENTS

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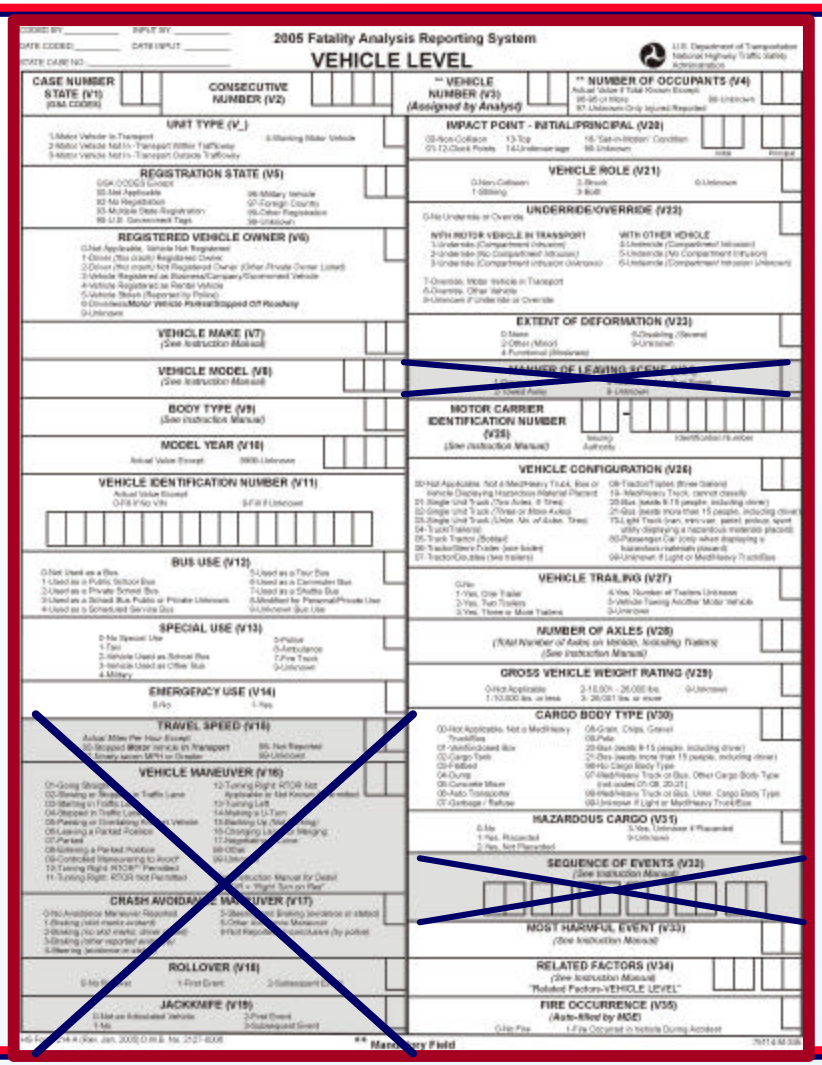
VEHICLE LEVEL CHANGES



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DRIVER LEVEL CHANGES

- **NEW DRIVER PRESENCE CODE**
  - **(4) MOTOR VEHICLE NOT IN TRANSPORT**
    - **(Parked / Stopped Off Roadway/ Working / In-Motion Outside Trafficway)**

NEW DRIVER PRESENCE CODE

(4) MOTOR VEHICLE NOT IN TRANSPORT

- ***Use this code regardless of the presence of an occupant in the driver's seat.***
- ***All other elements on the Driver Level must be left blank, except***
- ***Related Factors-Driver Level which should all be coded "00."***

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PERSON TYPE CHANGES

- **TO DATE, WE HAVE ONLY CODED MOTOR VEHICLES IN-TRANSPORT**
  - **WE HAVE ONLY CLASSIFIED PERSONS AS MOTORIST OR NON-MOTORIST.**

PERSON TYPE CHANGES

- FOR 2005, WE ARE CODING MOTOR VEHICLES NOT IN-TRANSPORT
  - ALSO CLASSIFY PERSONS AS OCCUPANTS OR NON-OCCUPANTS.
  - PERSONS IN MOTOR VEHICLES NOT IN-TRANSPORT WILL NOW BE CODED WITH THEIR MOTOR VEHICLE.

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PERSON TYPE 2004

MOTORIST	NON-MOTORIST
DRIVER of M.V. in T.	
PASSENGER of M.V. in T.	
UNKNOWN OCC. TYPE in M.V. in T.	
	OCC. of M.V. NOT in T. (03)
	OCC. of Non-M.V. T. DEVICE
	PEDESTRIAN
	BICYCLIST
	OTHER CYCLIST
	OTHER PEDESTRIAN (08)
	UNK. NON MOTORIST

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PERSON TYPE 2005

MOTORIST	NON-MOTORIST
DRIVER of M.V. in T.	
PASSENGER of M.V. in T.	
UNKNOWN OCC. TYPE in M.V. in T.	OCC. of M.V. NOT in T. (03)
	OCC. of Non-M.V. T. DEVICE
	PEDESTRIAN
	BICYCLIST
	OTHER CYCLIST
	OTHER PERSONS* (08)
	UNK. NON MOTORIST

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PERSON TYPE CHANGES

People In Motor Vehicles	**DRIVER of M.V. in T.** **PASSENGER of M.V. in T.** **UNKNOWN OCC. TYPE in M.V. in T.** **OCC. of M.V. NOT in T. (03)**
People Not In Motor Vehicles	**OCC. of Non-M.V. T. DEVICE** **PEDESTRIAN** **BICYCLIST** **OTHER CYCLIST** **OTHER PERSONS* (08)** **UNK. NON MOTORIST**

PERSON TYPE CHANGES

- 03 –Occupant of M.V. NOT in Transport
  - Parked Motor Vehicles
  - Motor Vehicles Stopped off Roadway/Trafficway
  - Motor Vehicle In Motion Outside Trafficway
  - Now, Also Working Motor Vehicle Occupants
    - Formerly, 08 – OTHER PEDESTRIAN

PERSON TYPE CHANGES

- **08 – OTHER PERSONS ON PERSONAL CONVEYANCES OR IN BULDINGS**
  - **Formerly read:**

    08 – OTHER PEDESTRIAN
  - **NO LONGER INCLUDES:**

    OCCUPANTS OF WORKING MOTOR VEHICLES (03)

PERSONAL CONVEYANCES

Inclusions:

1. Rideable toys

- Roller Skates
- In Line Skates
- Skateboards
- Baby Carriage
- Scooters
- Toy Wagons

PERSONAL CONVEYANCES

Inclusions:

2. Motorized rideable toys

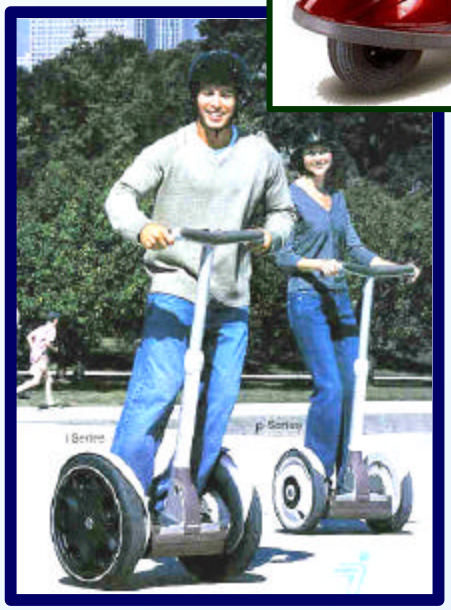
- Motorized skateboard
- Motorized scooter
- Motorized toy car

PERSONAL CONVEYANCES

Inclusions:

3. Devices for personal mobility assistance

- Segway-style devices
- Motorized and non-motorized wheelchairs
- Handicapped scooters



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SEQUENCE OF EVENTS
HARMFUL EVENTS

Collision *Involving* Motor Vehicle *in Transport*

12 - Motor Vehicle in Transport on Same Roadway
13 - Motor Vehicle in Transport on Other Roadway
54 - Motor Vehicle ***Strikes or is*** Struck by ***Cargo, Persons or Objects*** Set in Motion ***from/by*** Another Motor Vehicle In Transport

Collision *Involving* Motor Vehicle NOT *in Transport*

14 - Parked Motor Vehicle ***or Motor Vehicle Stopped Off Roadway***
45 - Working Motor Vehicle ***(construction, maintenance or utility vehicle only)***
55 – Other Not In-Transport Motor Vehicle

End of Presentation

FARS & GES 2005